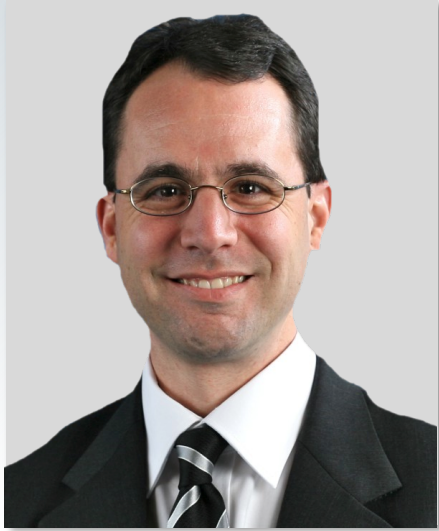


Epic Games, Inc. v. Apple Inc.

Expert Testimony of Professor Aviel Rubin

Professor Aviel Rubin



Professor,
Johns Hopkins University
Technical Director,
Johns Hopkins University Information Security Institute



Founder and Chief Scientist,
Harbor Labs



Founder and (Former) President,
Independent Security Evaluators



(Former) Research Scientist,
Bellcore & AT&T Labs



Electronic Frontiers Foundation (EFF) Pioneer Award



B.S., M.S.E., and Ph.D. in Computer Science and Engineering,
University of Michigan

Evaluate Apple's App Review and App Store distribution

Research and evaluate real-world data



- Significant security benefits
- Lower infection rates
- Lower volume of malicious or untrustworthy apps

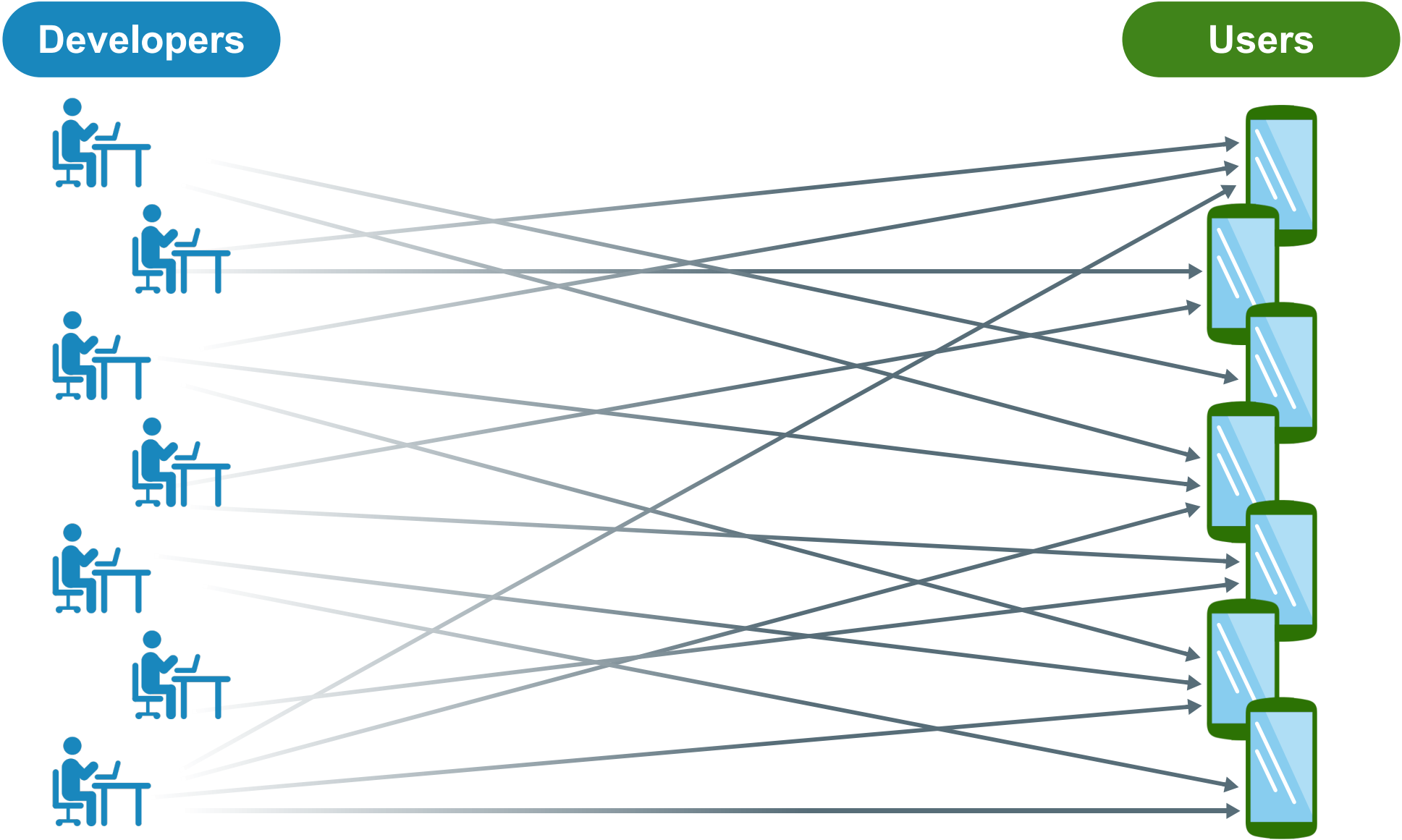
Safety

Privacy

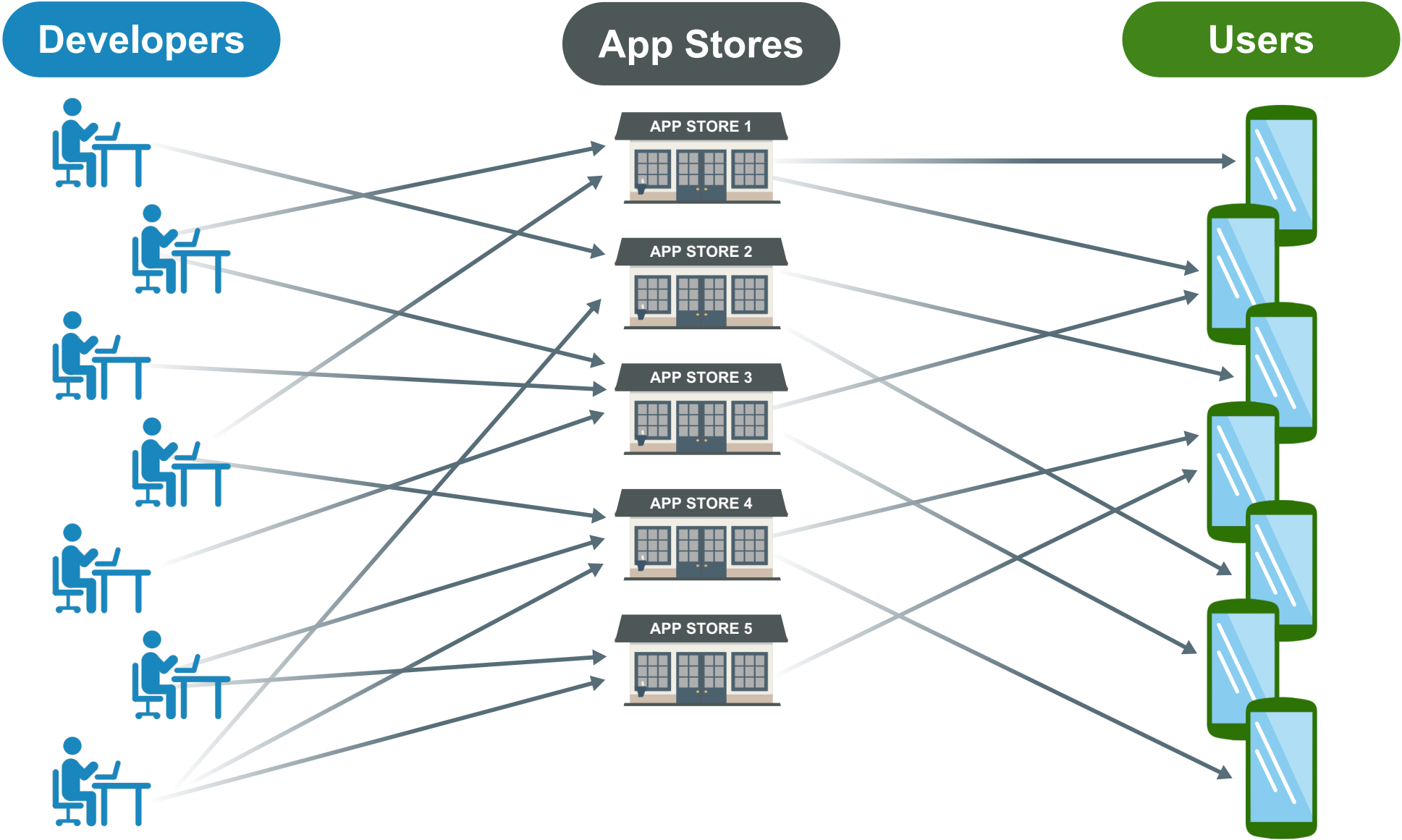
Reliability

Trustworthiness

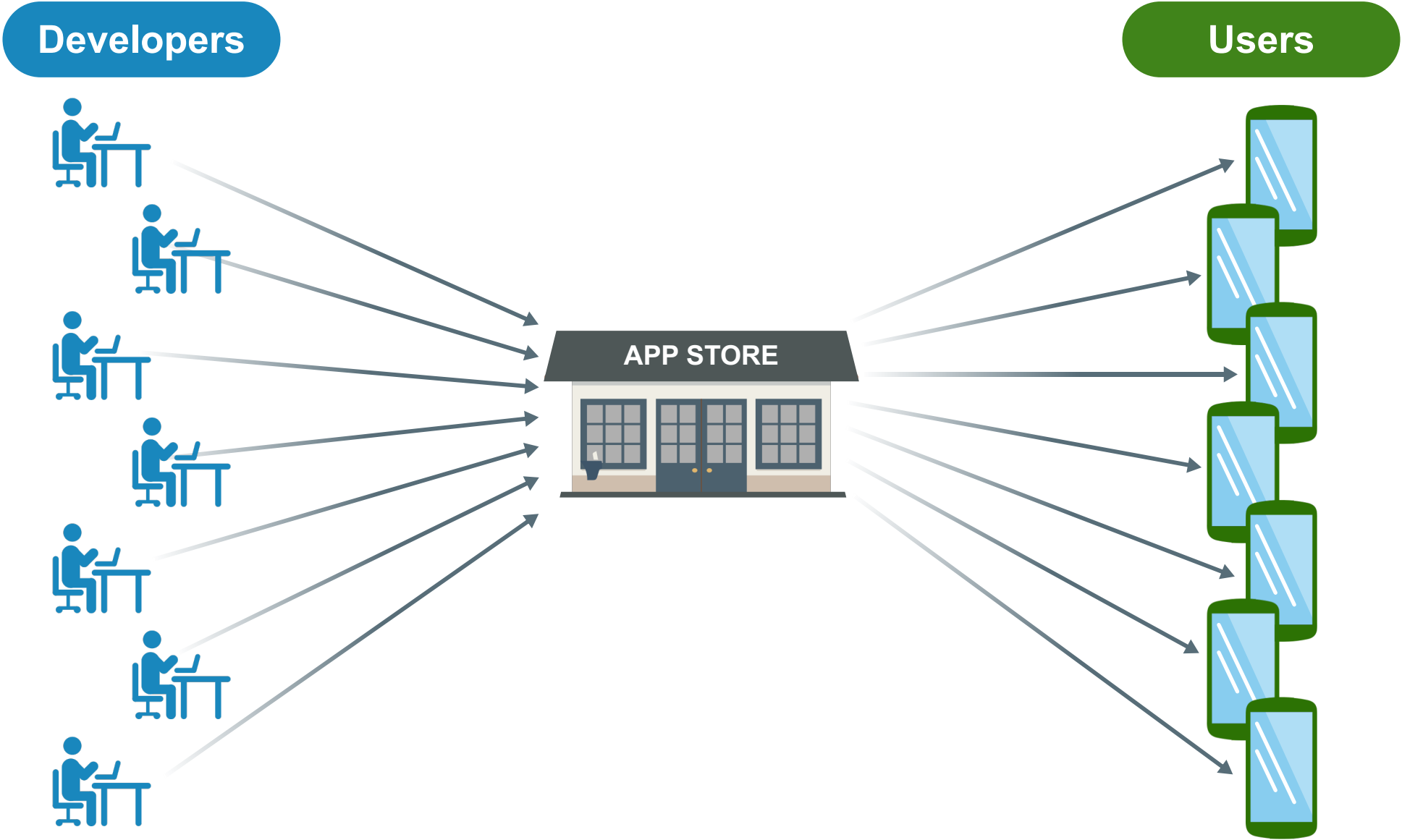
Direct Distribution



Multiple App Store Distribution



Centralized Distribution

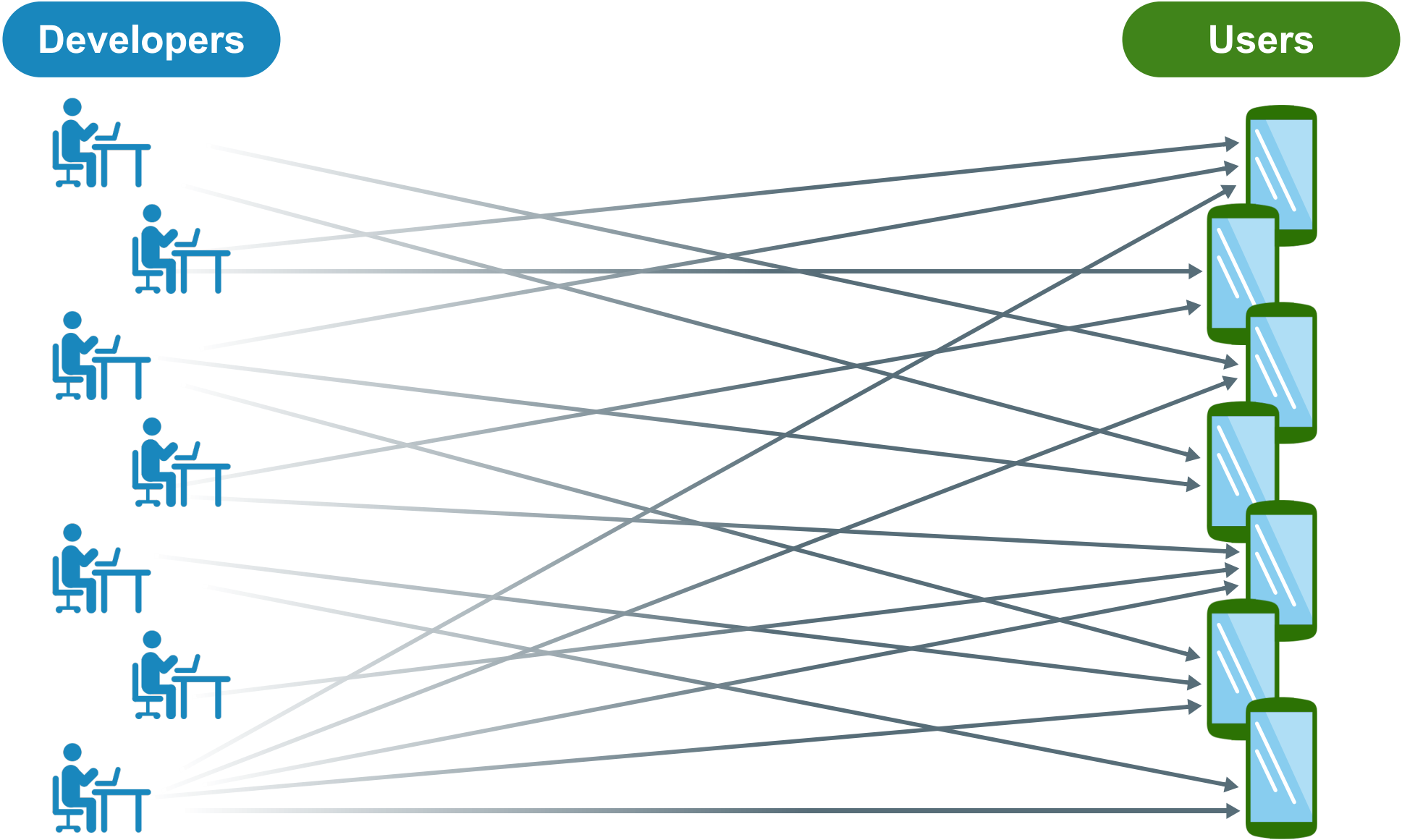


Sources of Apps

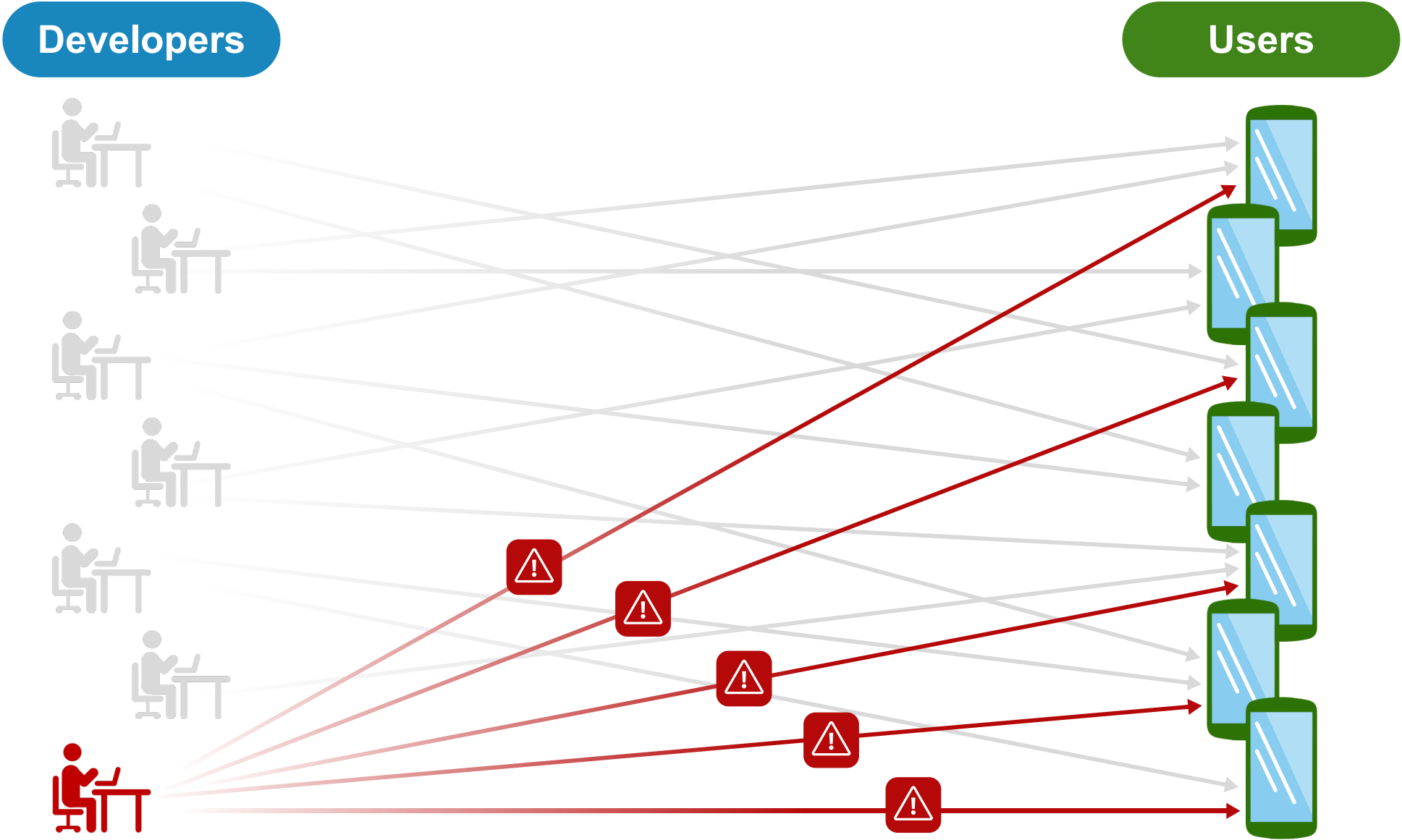
- From a specific app store
- Directly from the developer
(including the web)
- From any app store
- From other users
and sources

**Non-
Centralized**

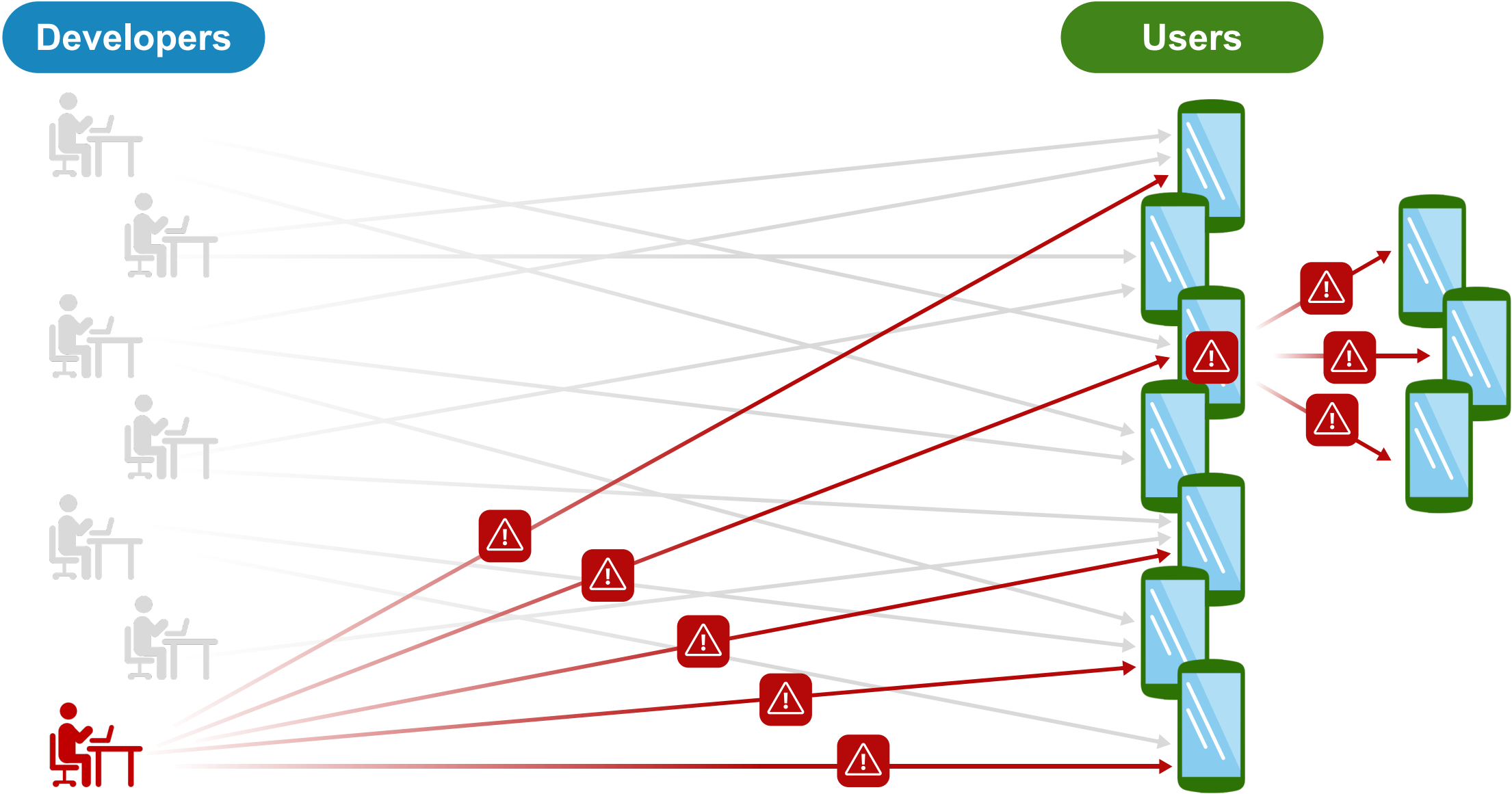
Direct Distribution



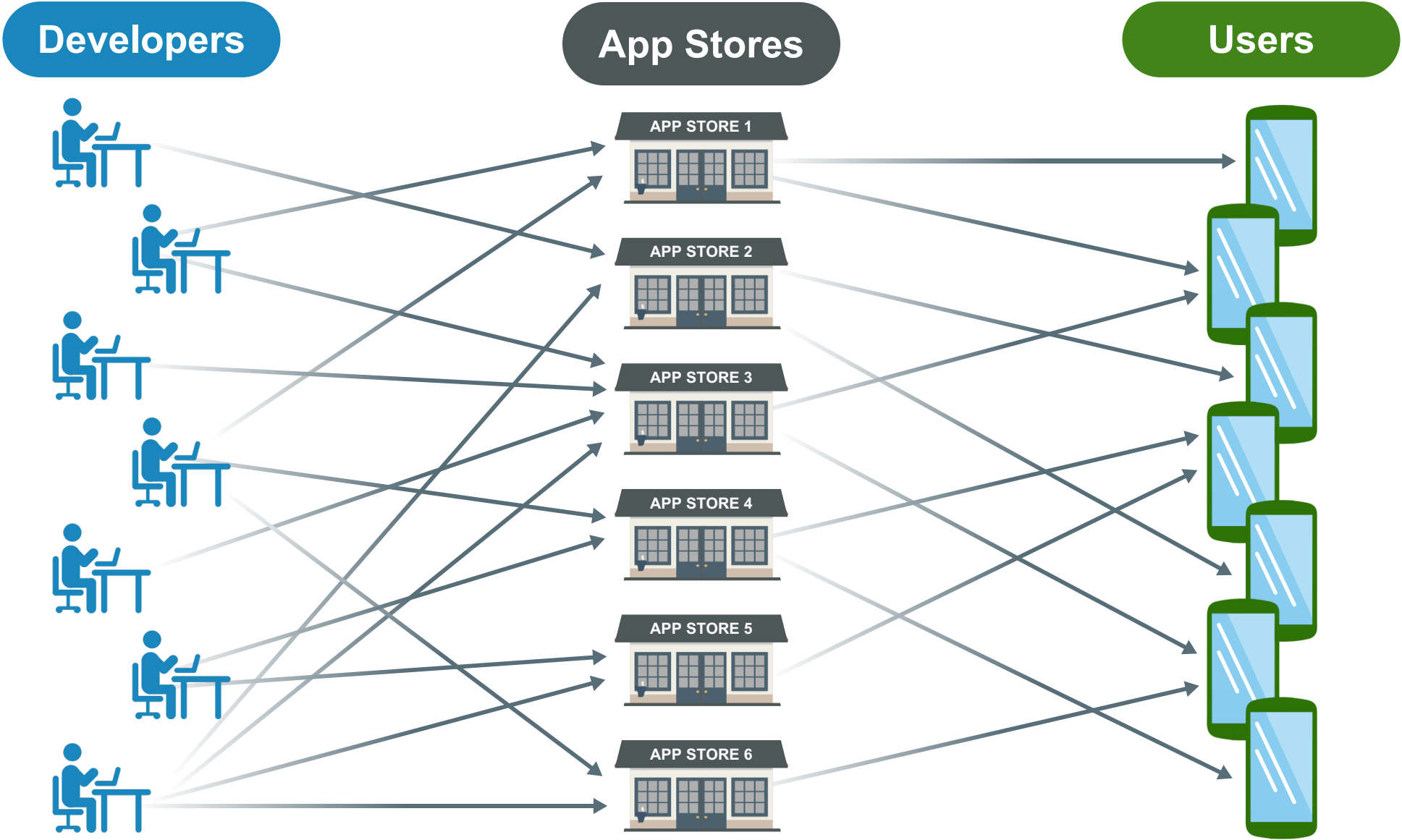
Direct Distribution



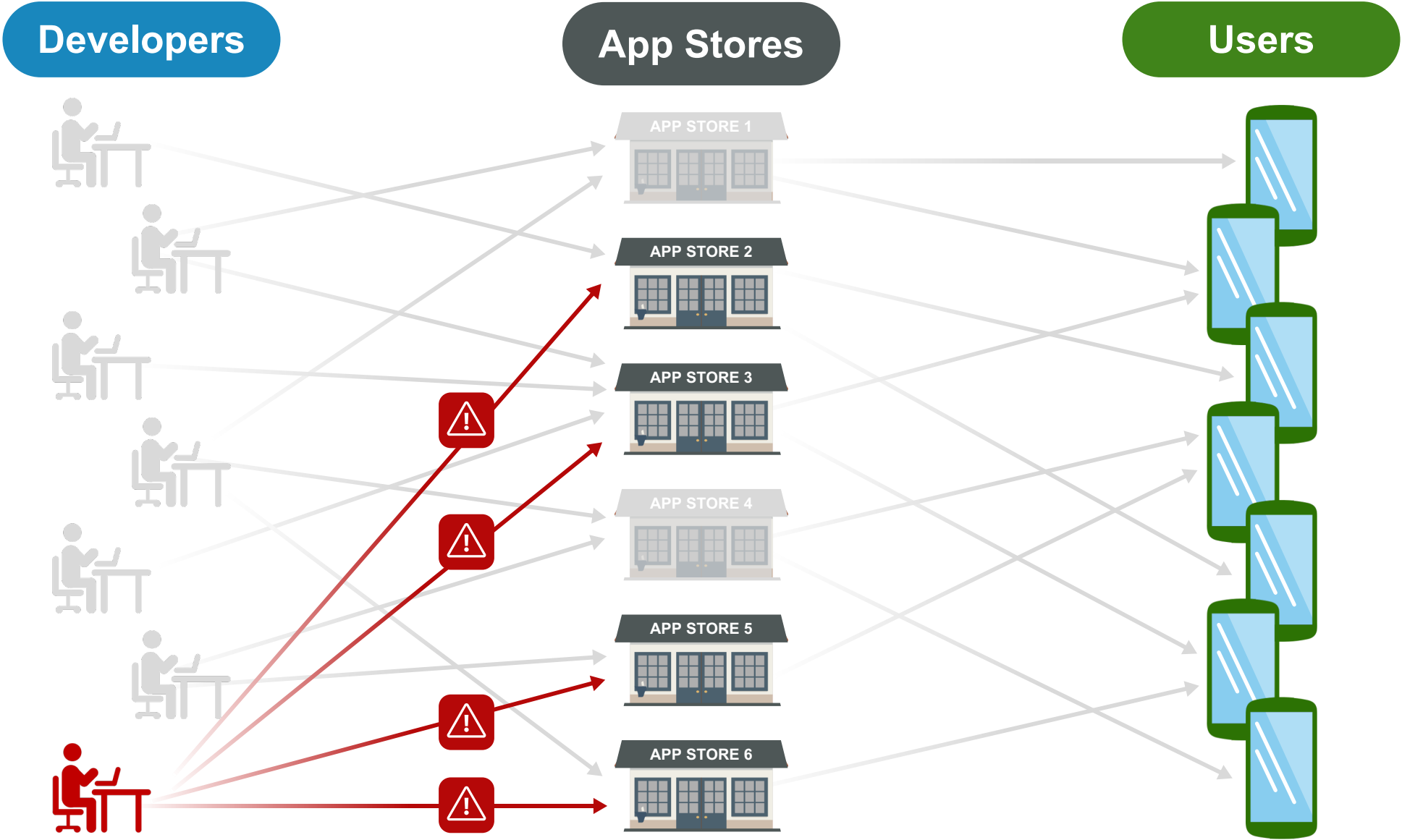
Direct Distribution



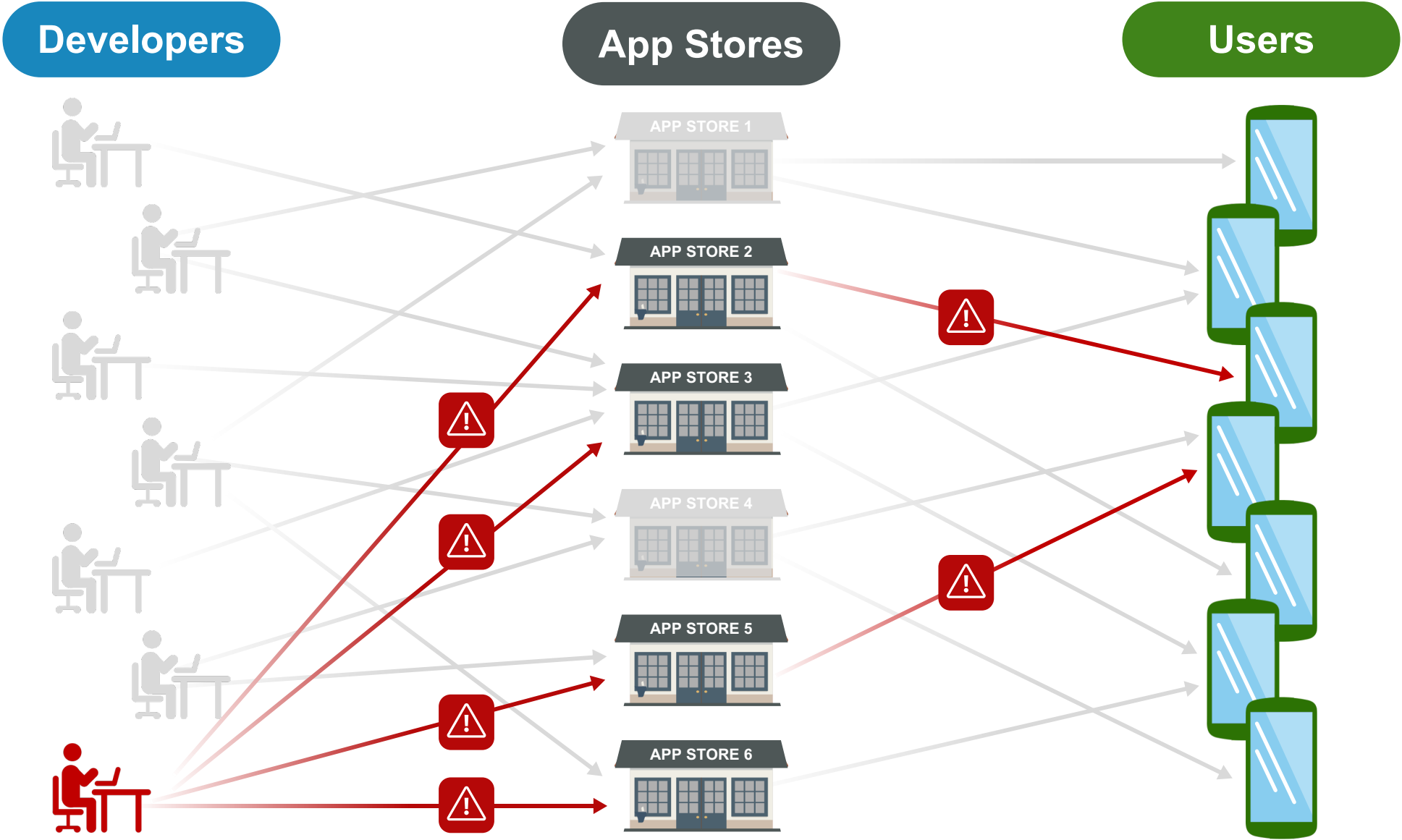
Multiple App Store Distribution



Multiple App Store Distribution



Multiple App Store Distribution



Attacker Tools



Multiple listings



Multiple listings with different variations



Listing in one and updating in another



Imposter apps

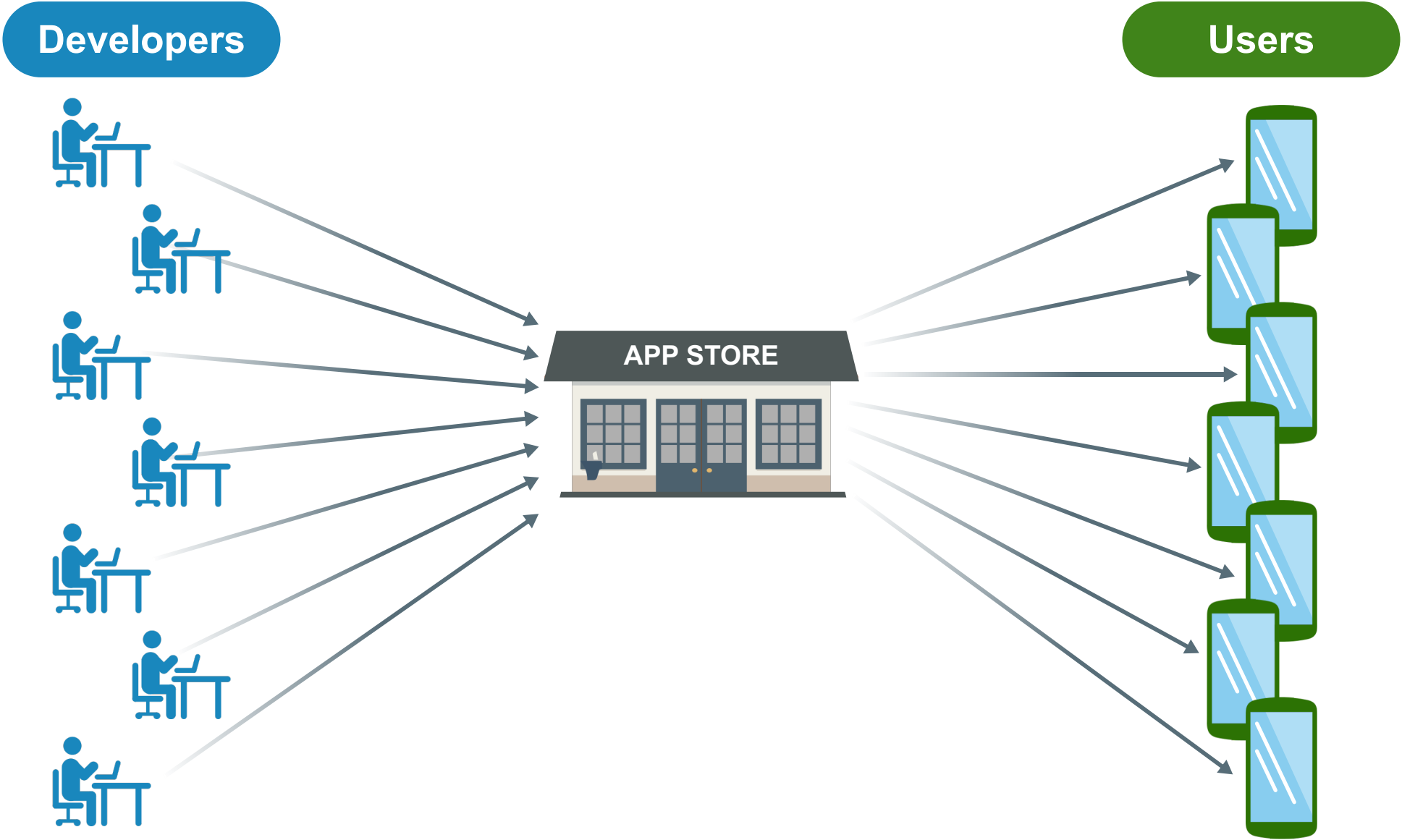


Imposter stores

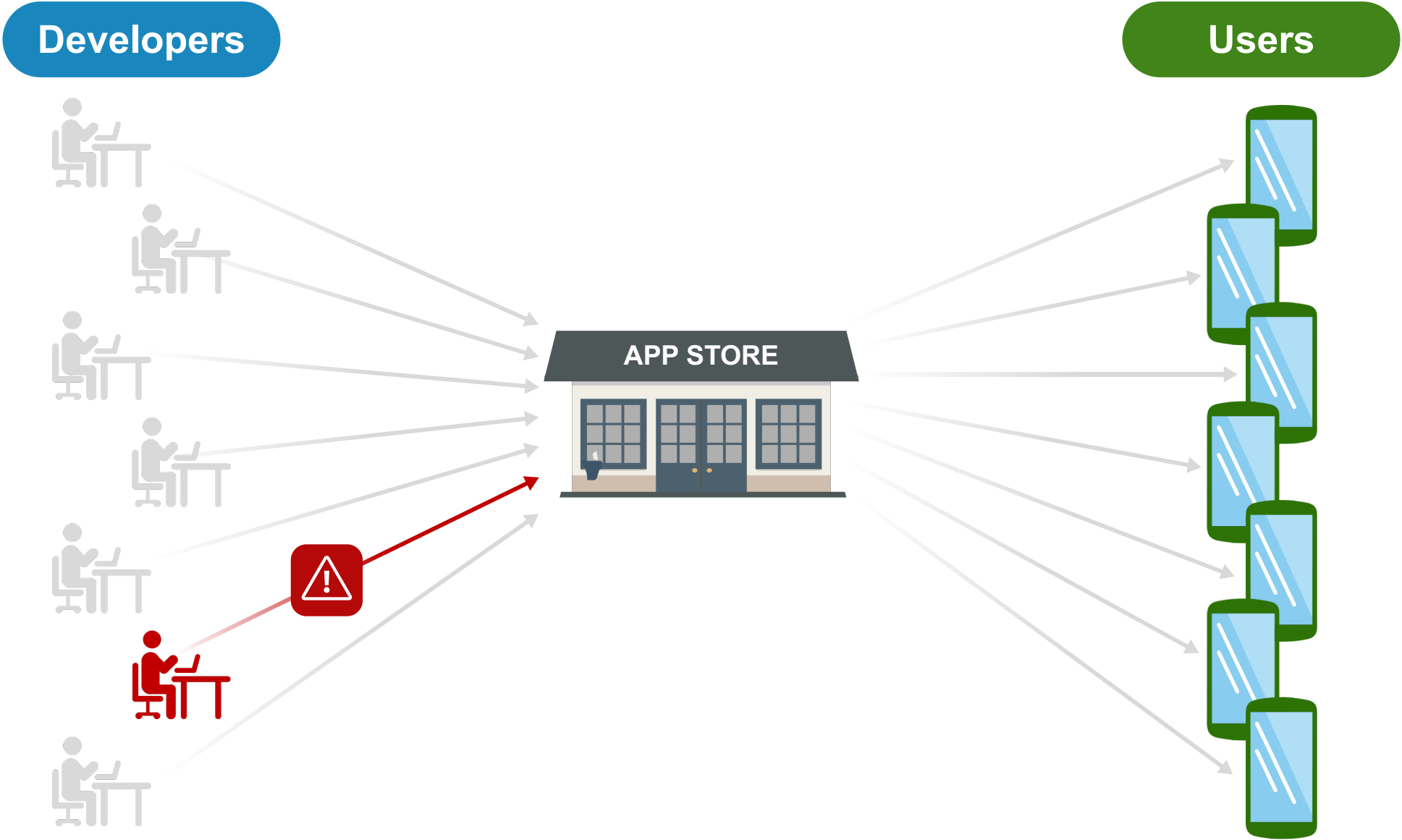


User infection

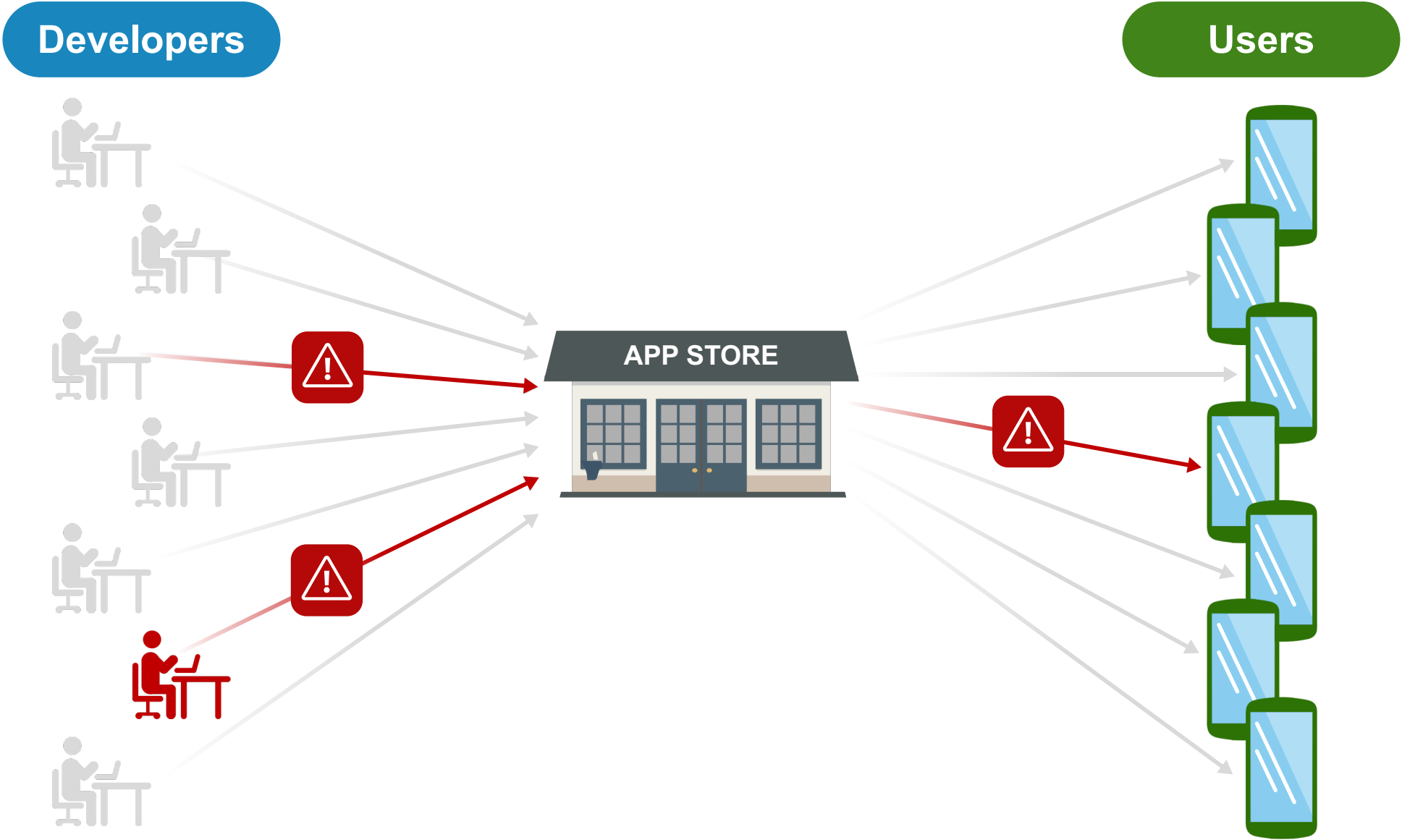
Centralized Distribution



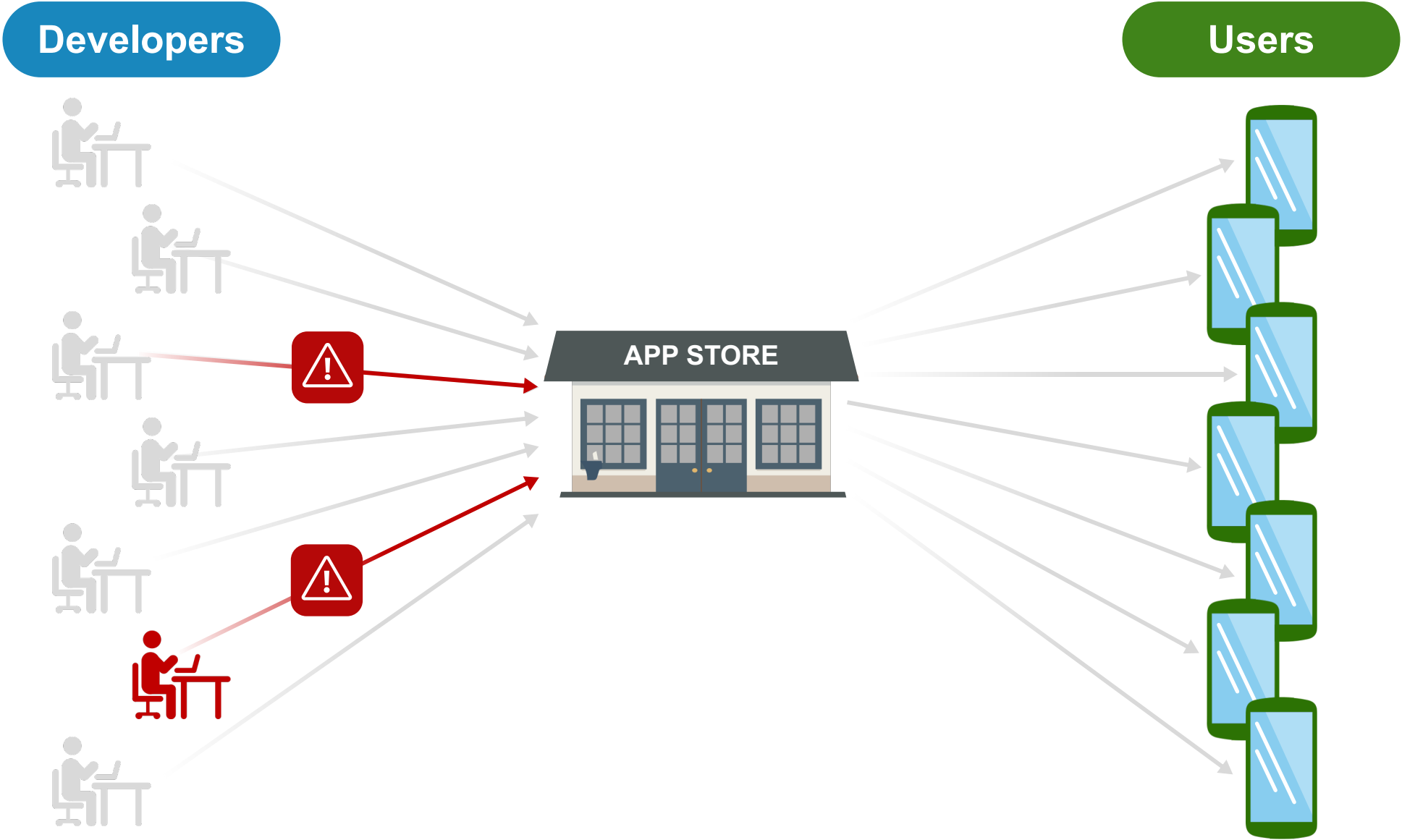
Centralized Distribution



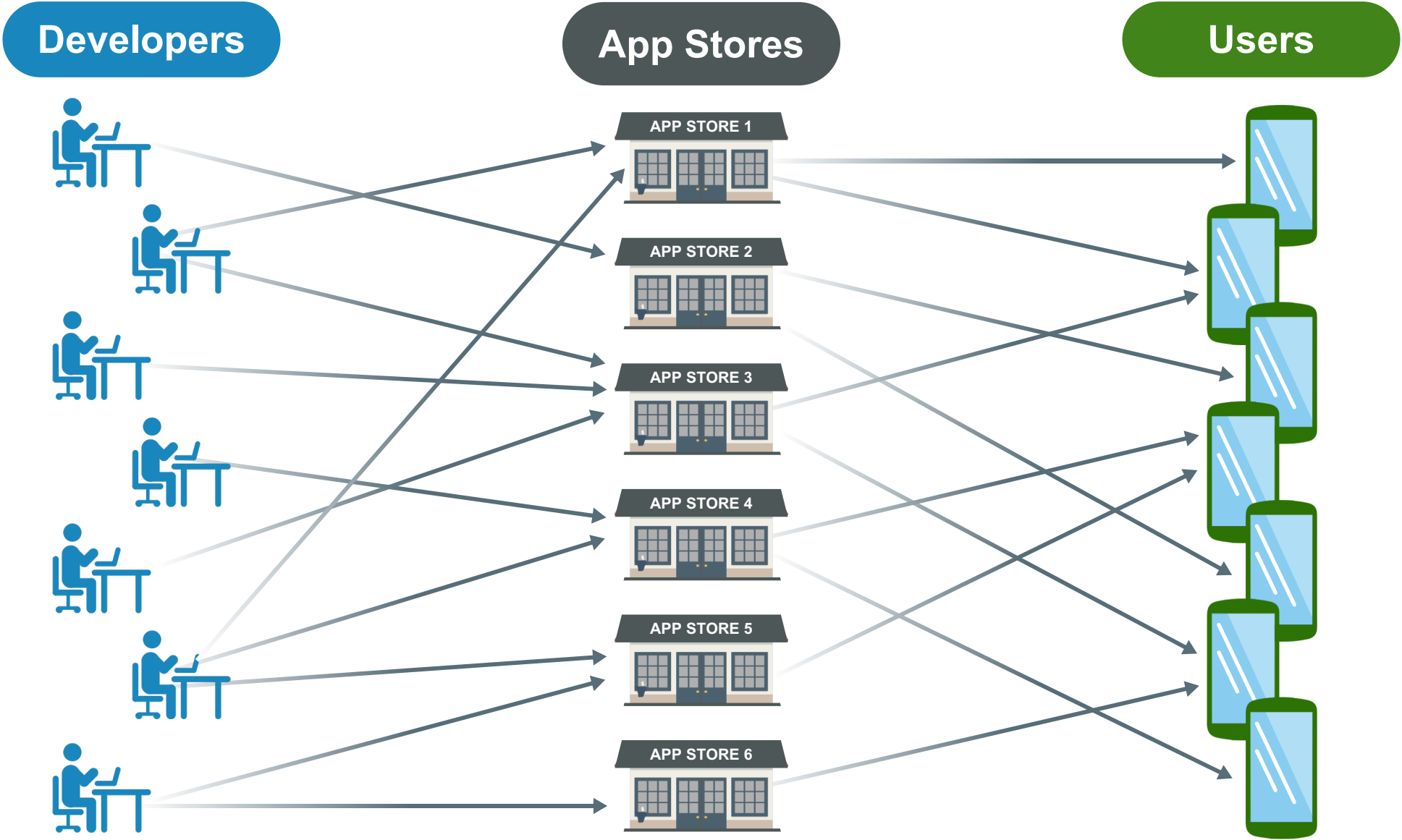
Centralized Distribution



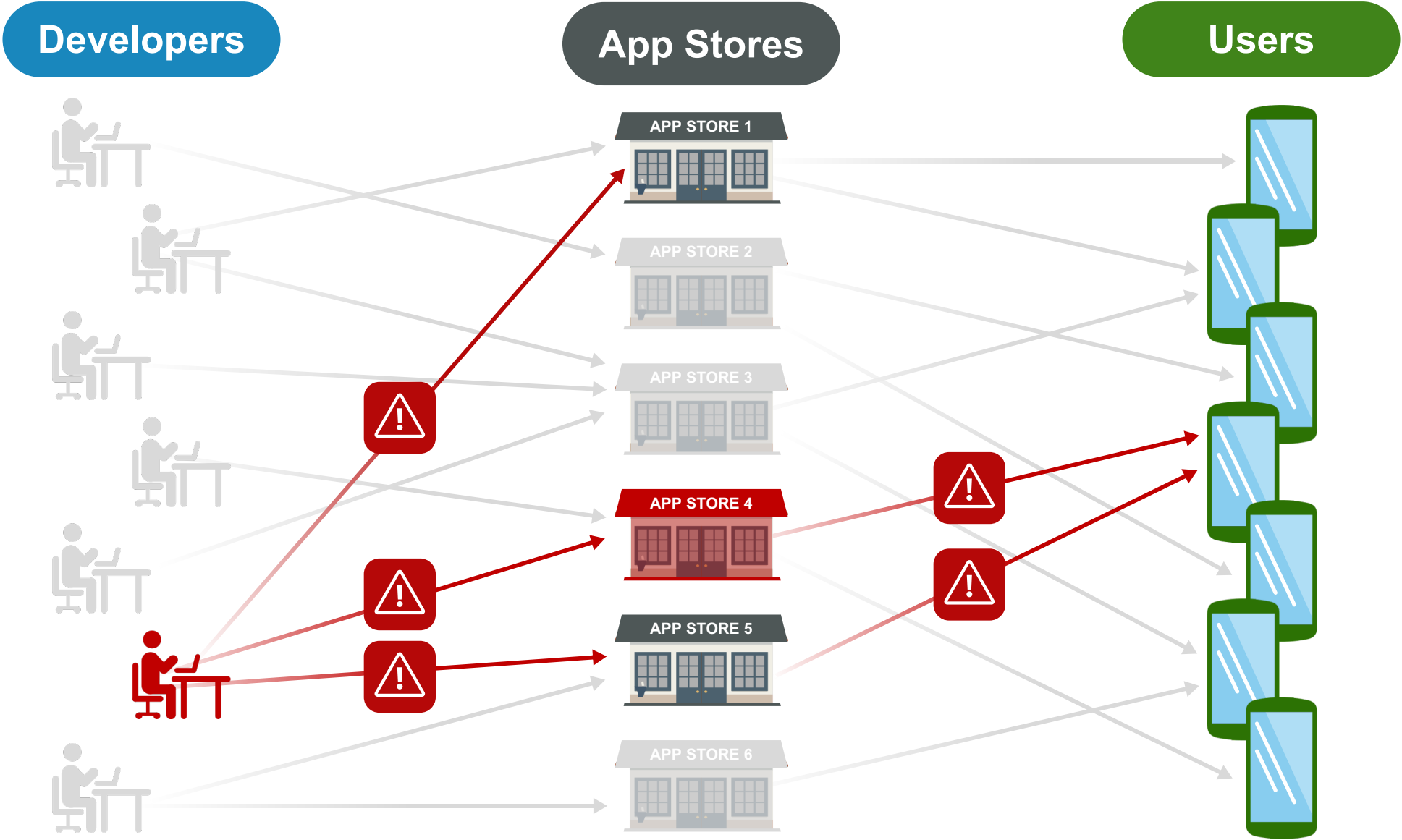
Centralized Distribution



Multiple App Store Distribution



Multiple App Store Distribution



iOS Distribution Model



NOKIA



DX-4975.001

DX-4975



2020 Mobile App Threat Landscape Report

Tumultuous Year Bred New Threats,
But the App Ecosystem Got Safer



DX-4934.001

DX-4934



2021 Cyber Security Statistics: ... 2021 Cyber Security Statistics: ...

Page 1 of 14



2021 Cyber Security Statistics The Ultimate List Of Stats, Data & Trends

Looking for the latest cyber security stats and trends? We've got you covered.

[Read our real cyber security trends report](#)

General Cyber Stats
Social Engineering
Vulnerabilities
Government
Small Business
Recent Cyber Attacks
Healthcare
Finance
Education
Fraud + Sources

Cybercrime Up 600% Due To COVID-19 Pandemic

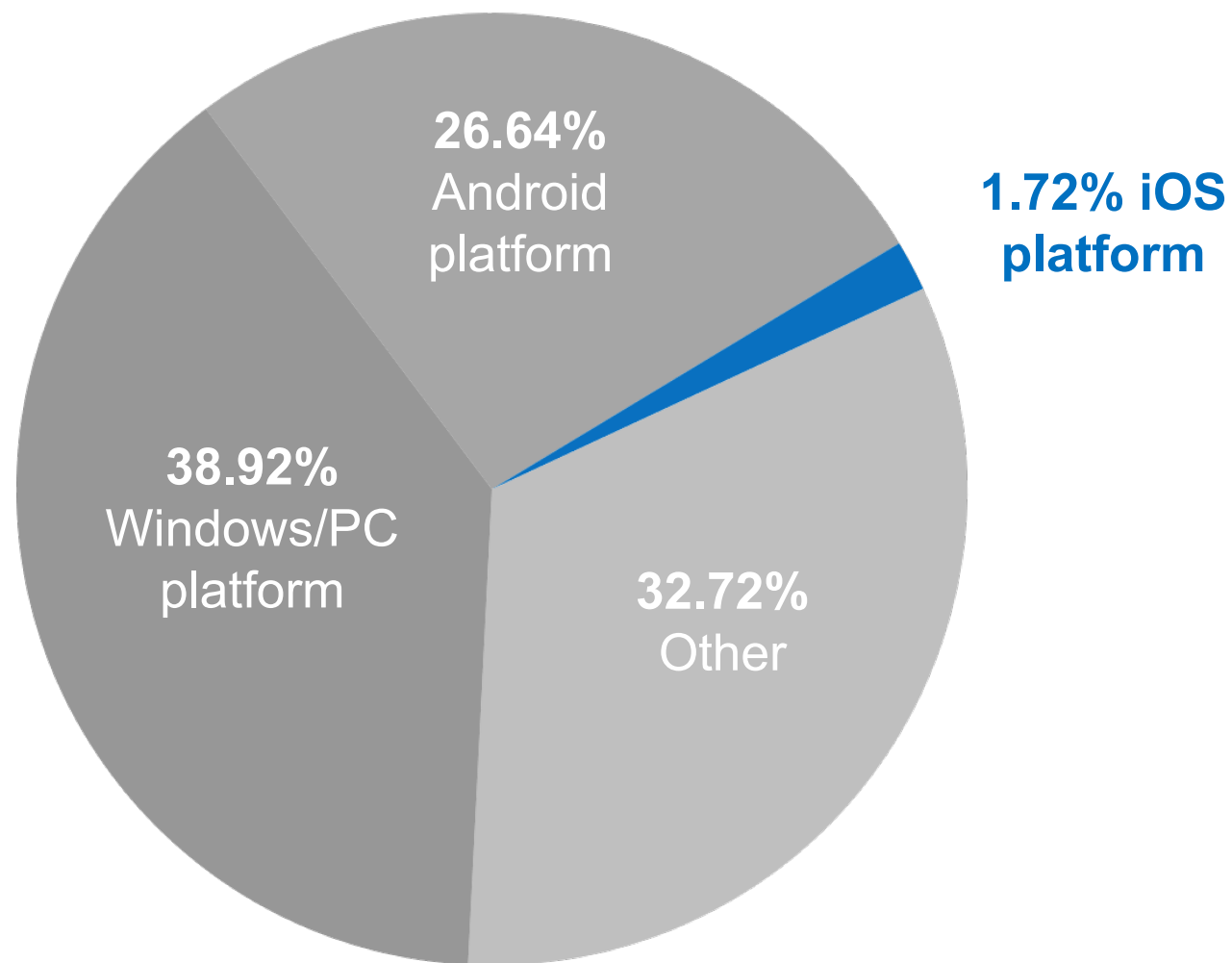
Due to the COVID-19 outbreak an uptick in sophisticated phishing email schemes by cybercriminals has emerged. Malicious actors are posing as the Center for Disease Control and Prevention (CDC) or World Health Organization (WHO) representatives.

<https://purplesec.us/resources/c...> <https://purplesec.us/resources/c...>
DX-4956.001

DX-4956

Infections by Device

Total infections between various devices (2020)



China Android Marketplace



Attack Trends

